



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/510,150

05/03/2005

Yoshinori Takase

XA-10183

8649

181 7590 03/06/2007
MILES & STOCKBRIDGE PC
1751 PINNACLE DRIVE
SUITE 500
MCLEAN, VA 22102-3833

EXAMINER

NGUYEN, THAN VINH

ART UNIT

PAPER NUMBER

2187

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

03/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/510,150

Applicant(s)

TAKASE ET AL.

Examiner

Than Nguyen

Art Unit

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/5/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-60 are pending.
2. The IDS, filed 10/5/04, has been considered.
3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Nonvolatile Memory With Independent Access Capability To Associated Buffer.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claims 1-60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. Claim 1 recites the limitation "the bank" in line 4. There is insufficient antecedent basis for this limitation in the claim. It is unclear which bank of the plurality of banks Applicant is referring to.
8. Claim 33 recites the limitation "the buffer region". There is insufficient antecedent basis for this limitation in the claim. It is unclear which buffer region of the plurality of buffer regions Applicant is referring to.

9. Claim 33 recites the limitation "the non-volatile storage region". There is insufficient antecedent basis for this limitation in the claim. It is unclear which non-volatile storage region of the plurality non-volatile storage regions Applicant is referring to.

10. Claim 34,35 recites the limitation "the operation directive command". There is insufficient antecedent basis for this limitation in the claim. It is unclear which operation directive command (first or second) Applicant is referring to.

11. As to claims 1,28,33,52-54 it is unclear as what "an outside" or "the outside" represent. This term is vague and ambiguous. Is it the outside of the storage device/memory bank/control unit? Applicant needs to clarify what "an outside" represents. Claims 2-27,29-32,34-51, and 55-60 are also rejected for incorporating this error. Applicant should also check the dependent claims for usage of the above term.

12. As to claim 1,28,33,52-54 the claim has language such as "can be caused to" or "capable of" which only indicate the possibility of having this property/function and does not necessarily indicate that the claimed invention possesses this property/function. Applicant must definitely clarify whether the claimed invention possesses the above property/function by removing the above language. Appropriate correction is required. Applicant should also check the dependent claims for usage of the above term.

13. As to claim 34, it is unclear as what "brings the command accepting state" mean.

14. Dependent claims 2-27, 29-32, 39-51, and 55-60 are also rejected for incorporating the error(s) of their parent claim.

Allowable Subject Matter

Art Unit: 2187

15. Claims 1-60 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. As to claim 1,28 the prior art does not teach a non-volatile storage device having a plurality of banks, wherein each bank has a non-volatile memory unit and a buffer unit, wherein the non-volatile memory unit of each bank can carry out an access operation independently, and a control unit can control a first access processing including an access to one buffer unit, and the second access processing including an access to one non-volatile memory unit and an access to a plurality of non-volatile memory units and capable of being caused to select either of the accesses. Claims 2-27 and 29-32 are also allowable for incorporating the limitations of claims 1/28, and further limitations.

17. As to claim 33, the prior art does not teach a non-volatile storage device comprising a non-volatile storage unit divided into a plurality of non-volatile storage regions, a buffer circuit divided into a plurality of buffer regions corresponding to the non-volatile storage regions, a control unit accepting a plurality of operation directive commands the outside, the operation directive commands having: a first operation directive command for giving a directive of an access operation between the buffer circuit and the outside; and a second operation directive command for giving a directive of an access operation between the buffer circuit and the non-volatile storage unit, the first operation directive command giving a directive of an access operation to the buffer region, and the second operation directive command capable of selecting either an access operation to the non-volatile storage region or an access operation to the non-

Art Unit: 2187

volatile storage regions. Claims 34-51 are also allowable for incorporating the limitations of claim 33, and further limitations.

18. As to claim 52, the prior art does not further teach a non-volatile storage device comprising a non-volatile storage unit having a plurality of storage regions, and a same number of buffer circuits as the number of the storage regions, the buffer circuits being connected to an outside and being caused to correspond to the storage regions, respectively, the buffer circuits being accessed from the outside independently based on a control to be carried out by the control unit, respectively, and one or a plurality of the storage regions being capable of carrying out an access operation independently together with the corresponding buffer circuit based on the control to be carried out by the control unit.

19. As to claim 53, the prior art does not teach a non-volatile storage device comprising a non-volatile memory unit being divided into a plurality of memory banks which can independently carry out an access operation, respectively, a buffer unit being divided into a plurality of regions corresponding to the respective memory banks, and a control unit being capable of independently carrying out an access control in accordance with a directive given from an outside with respect to the non-volatile memory unit and the buffer unit, and giving an access directive to one or a plurality of the regions of the buffer unit in accordance with the directive given from the outside and then carrying out an access control between the non-volatile memory unit and the buffer unit with respect to one or a plurality of the memory banks corresponding to one or a plurality of the regions.

20. As to claim 54, the prior art does not teach a non-volatile storage device comprising: a non-volatile memory unit; a buffer unit; and a control unit, the control unit being capable of

Art Unit: 2187

controlling a first access processing between an outside and the buffer unit, a second access processing between the non-volatile memory unit and the buffer unit, and an initialization processing of the buffer unit upon receipt of directives from the outside separately from each other, and carrying out no initialization over the buffer unit depending on a completion of the first access processing and the second access processing but bringing the buffer unit into an initializing state depending on the initialization processing of the buffer unit. Claims 55-60 are also allowable for incorporating the limitations of claim 54, and further limitations.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Than Nguyen whose telephone number is 571-272-4198. The examiner can normally be reached on 8am-3pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/510,150

Page 7

Art Unit: 2187

A handwritten signature in black ink, appearing to read 'Than Nguyen', with a stylized, cursive script.

Than Nguyen
Primary Examiner
Art Unit 2187